

OEPA NOV-2002
Q1 & Q2
Statiment stack
Heavy Duty Sump
State EA

***** Enforcement Confidential *****

**INTERIM REPORT
WITH
DRAFT PRELIMINARY FINDINGS
MULTIMEDIA COMPLIANCE INSPECTION**

**CLOW WATER SYSTEMS COMPANY
2266 SOUTH SIXTH STREET
COSHOCOTON, OHIO**

Report Date

August 31, 2004

Inspection Dates

July 27 - 29, 2004
&
August 3 - 4, 2004

USEPA, Region 5 Inspectors

Sheila Desai
Cher Salley
Michael Beedle
John Gierczak
Gerald Golubski
Robert McCoy

CONTENTS

INTRODUCTION	1
OBJECTIVES	1
INSPECTION METHODS	1
BACKGROUND	2
DRAFT PRELIMINARY FINDINGS	9
CLEAN AIR ACT	9
CLEAN WATER ACT - NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	9
SPILL PREVENTION CONTROL AND COUNTERMEASURES	10
RESOURCE CONSERVATION AND RECOVERY ACT - HAZARDOUS WASTE	10
TOXIC SUBSTANCES CONTROL ACT - POLYCHLORINATED BIPHENYL MANAGEMENT	11
EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT & COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT	12
ENVIRONMENTAL MANAGEMENT SYSTEM	14

INTRODUCTION

A multimedia compliance inspection (MMI) was conducted by USEPA, Region 5 at Clow Water Systems Company (Clow), located in Coshocton, Ohio. The facility is a ferrous foundry that manufactures ductile iron pipes and ductile iron pipe fittings for water distribution systems.

The city of Coshocton is located in east, central Ohio, approximately 75 miles northeast of the city of Columbus. Clow is situated about one-half mile east of the Muskingum River and located near private residences and manufacturing plants.

OBJECTIVES

The specific objectives of the MMI were to evaluate compliance with:

- Air Pollution Control regulations under the Clean Air Act (CAA) and the Federally approved portions of the State of Ohio's Air Pollution Implementation Plan
- Water pollution control regulations under the Clean Water Act (CWA), including National Pollutant Discharge Elimination System (NPDES) permit requirements and Spill Prevention Control and Countermeasure (SPCC) regulations
- Hazardous waste management regulations under the Resource Conservation and Recovery Act (RCRA) and rules adopted under the State of Ohio's hazardous waste program
- Toxic Substances Control Act (TSCA) regulations for polychlorinated biphenyl (PCB) management
- Emergency Planning and Community Right-to-Know Act (EPCRA) regulations in 40 CFR Parts 355 and 370 and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) release notification requirements for hazardous substances in 40 CFR Part 302

Information regarding the use of an environmental management system to promote facility compliance with environmental requirements was also obtained.

INSPECTION METHODS

The inspection of Clow was conducted on July 27 through July 29 and August 3 and 4 of 2004. The inspection included:

- A review of facility records and documents
- Discussion of plant operations with facility representatives
- On-site examination of plant operations

- Collection of samples under RCRA
- Exit meetings between Clow and USEPA representatives to discuss preliminary inspection findings

A receipt for samples was provided to Clow for the RCRA samples that were collected during the inspection. The samples were also split with Clow in response to a request made by the company.

BACKGROUND

Clow operates a cupola furnace to generate molten iron which is subsequently processed using desulfurization and magnesium inoculation to give the iron desired ductile properties. After inoculation, the molten iron is transferred to the facility's centrifugal casting area to produce pipe or to the facility's sand casting operations where molds and cores are used to produce fittings. Ductile iron pipes are transferred from the centrifugal casting area, heat treated in an annealing oven, hydro-tested, cement lined, painted and bundled for storage. After cooling, fittings are removed from the sand molds, cleaned, ground, machined, cement lined and then painted. Other operations at the facility include mold and core making, sand handling to capture and condition reusable sand, and pattern making.

Clean Air Act

Air emissions from the facility's cupola are controlled by a series of scrubbers that include a wet cap scrubber followed by a venturi scrubber and a ring-jet scrubber. A centrifugal separator and packed bed unit are located between the venturi scrubber and ring-jet scrubber. The facility also has a number of baghouses that control air emissions from the desulfurization and inoculation operations, sand mixing and metal pouring operations and other operations.

Air emissions units are identified in the CAA, Title V permit that the Ohio EPA issued to Clow on June 8, 2000. The permit became effective on the issuance date and expires on June 8, 2005. Among other things, the Title V permit includes two operational restrictions for the facility's cupola (emissions unit P901). One of the operational restrictions requires the pressure drop across the unit's venturi scrubber to be continuously maintained within a range of 35 to 60 inches of water column at all times while the emissions unit is in operation. The other operational restriction requires emissions unit gases to be burned at 1300 degrees Fahrenheit in a direct flame afterburner or equivalent device, designed for a minimum of 0.3 second residence time.

On April 11, 2002, the Director of the Ohio EPA issued a notification of violation (NOV) to Clow informing the company that, among other things, it failed to maintain an afterburner temperature of 1300 degrees Fahrenheit for emissions unit P901, in violation of OAC 3745-21-08(D). The April 11, 2002 NOV further informed Clow that it failed to provide Prevention of Significant Deterioration (PSD) Permit to Install (PTI) applications for major modifications that were performed to emissions unit P901 during 1989 and 1998. The NOV also informed Clow that, based on projected emission increase estimates supplied by Clow for 1989 and 1998, it appears PSD significance levels were exceeded as a result of the modifications to emissions unit P901. According to the Ohio EPA, the

information shows that, for 1989, Clow was not in compliance with Federal PSD regulation 40 CFR Part 52.21 for particulate matter (PM) and volatile organic compounds (VOC) and, for 1998, Clow was not in compliance with Federal PSD regulation 40 CFR 52.21 and State PSD regulations OAC 3745-31-10 through 20 for PM, PM₁₀ and VOC.

As part of the reporting conditions in the facility's Title V permit, Clow is required to submit deviation reports to the Ohio EPA on a quarterly basis. Quarterly deviation reports submitted through the second quarter of 2004 indicate there have been a number of instances where emissions unit P901 was not maintained within the operational restrictions set forth in the permit for burning gases at 1300 degrees Fahrenheit in the unit's afterburner and for pressure drop across the unit's venturi scrubber.

CWA - NPDES Permit

Clow obtains water from the city of Coshocton and from on-site wells for use at the facility. Water is used in process operations, for noncontact cooling and for sanitary proposes. Sanitary wastewater is discharged to the city of Coshocton.

Clow discharges wastewaters to the Muskingum River under NPDES Permit OH0094455. The NPDES permit was issued by the Ohio EPA on March 11, 2003 and expires on March 31, 2008.

Process wastewaters generated from operation of the facility's cupola scrubbers are subject to regulation under the Ferrous Casting Subcategory of the Metal Molding and Casting Category in 40 CFR Part 464. The process wastewaters are treated in an on-site wastewater treatment plant (WWTP) that uses clarification and sludge removal. Treated process wastewaters from the on-site WWTP are authorized to be discharged through NPDES Outfall 001. Based upon conditions in the permit, it appears that the discharge through NPDES Outfall 001 is non-continuous, as defined in 40 CFR 464.02(f). The facility's typical operating mode is to recycle the process wastewaters.

Noncontact cooling water is used to remove heat energy from the facility's cupola shell, pipe casting machines and other process equipment. The facility uses cooling towers in conjunction with a cement-lined pond for noncontact cooling water circulation.

In addition to Outfall 001, the NPDES permit includes four storm water outfalls, designated as Outfalls 002 through 005, and an internal monitoring station (Outfall 601) for landfill leachate that was tributary to Outfall 005. According to information provided by Clow during the MMI, the landfill leachate has been routed to the facility's on-site WWTP and is no longer discharged through Outfall 005. Conditions in the NPDES permit require the permittee to minimize the discharge of pollutants through the storm water outfalls through implementation of a Storm Water Pollution Prevention (SWPP) Plan.

CWA - SPCC Requirements

Clow has greater than 1,320 gallons of aboveground oil storage capacity and, due to the facility's location, could reasonably be expected to discharge oil into or upon navigable waters of the United States. As a result, Clow is required to develop an SPCC Plan for the facility. Clow has developed an SPCC Plan which was last revised in April of 2004.

RCRA - Hazardous Waste

Clow is a large quantity hazardous waste generator and a generator of used oil with USEPA Identification Number OHD004294849. The facility also has a former hazardous waste surface impoundment that cannot be certified closed until closure of an adjacent, active solid waste disposal cell that receives nonhazardous foundry waste (active nonhazardous foundry waste cell).

Hazardous waste streams generated at the facility include Cal-Si-Bar (Calsibar) sand from pipe casting (EPA hazardous waste number D005); paint wastes (EPA hazardous waste number D001); and solids from the cleanout of the cross-over duct work that carries cupola furnace exhaust gas to the venturi scrubber (EPA hazardous waste numbers D006 and D008).

Air pollution control wet scrubber sludge generated from wastewater treatment has exhibited the characteristic of toxicity for cadmium and lead. The wet scrubber sludge is treated using lime to remove the toxicity characteristics. Dust generated from the desulfurization and inoculation of molten metal exhibits the characteristic of toxicity for lead in the event that the emissions are not treated to stabilize heavy metals prior to being captured by the facility's desulfurization/inoculation baghouse.

The facility's Isocure core making operation uses a circulated sulfuric acid scrubbing medium to capture dimethylethylamine (DMEA) gas that is used for catalytic core curing. When the sulfuric acid scrubbing solution is spent, it is sent off-site and processed to recover the DMEA and regenerate sulfuric acid which is returned to Clow for use in the Isocure core making operation. Facility waste stream records indicate that the spent sulfuric acid may also be used as a substitute for virgin sulfuric acid at the on-site WWTP.

Solid waste streams generated at the facility include cupola slag; refractory; spent foundry sand; core butts and waste core material from the core making operations; baghouse dusts from lime handling, sand handling, metal pouring, shotblasting and core making; paint waste and spent paint booth filters. Used oil is generated from machining operations, facility vehicles and hydraulic systems. Facility maintenance operations result in the generation of spent fluorescent lights, batteries and old computer equipment.

A. Ohio EPA RCRA Actions

On May 6, 2004, Clow was inspected by the Ohio EPA. A number of violations were identified by the Ohio EPA based upon the inspection. The violations involved storage of D005 hazardous waste

Calsibar sand on the ground, in piles in the facility's waste bunker and on the ground beneath a cold pipe rack; failure to minimize the possibility of hazardous waste release to air and to soil by its management of Calsibar sand in the waste bunker and in the cold pipe rack area; failure to demonstrate that the facility's contingency plan was implemented when Calsibar sand waste had been released onto the ground in the cold pipe rack area (creating conditions that could potentially generate hazardous dust or contaminate soil); and, closure and post-closure care. As a result of the above mentioned violations, the Ohio EPA also informed Clow that there were additional violations that involved preparedness and prevention; manifest-general requirements; packaging; placarding; and, testing, tracking and recordkeeping requirements for generators, treaters and disposal facilities.

From April of 2002 to September of 2003, through inspections and information obtained from Clow, the Ohio EPA identified a number of hazardous waste violations at the foundry, which included:

- operating a hazardous waste storage facility without a permit;
- failure to take measures to operate and maintain the facility so as to minimize the possibility of fire, explosion or any release of hazardous waste; and
- failure to determine if wastes generated on-site were hazardous.

On October 29, 2003, the Ohio EPA issued Director's Final Findings and Orders (DFFOs) in response to the violations. In addition to an \$18,500 civil penalty, the DFFOs include provisions that require Clow to maintain for three years written documentation that all wastes generated at the facility are evaluated to determine if they are hazardous.

On November 17, 1980, Clow notified USEPA of hazardous waste activity at the facility and was issued a USEPA identification number. On March 31, 1982, Clow was issued a State hazardous waste facility installation and operation permit. The permit reportedly allowed hazardous waste storage in a surface impoundment and hazardous waste storage and treatment in a waste pile.

Information obtained from the Ohio EPA indicates that, prior to July 1988, Clow discharged approximately one million gallons per day of process waters to the above-mentioned surface impoundment and sludge that accumulated in the impoundment was EP toxic for cadmium and lead. Activities associated with the above-mentioned waste pile involved the storage of calcium carbide desulfurization slag (D003 waste) and on-site treatment of the slag with water to render it non-hazardous.

On July 16, 1985, the Ohio EPA issued DFFOs that specified closure of the hazardous waste surface impoundment, unreacted portions of the calcium carbide desulfurization slag pile, and a solid waste landfill. The Orders also required extended ground water monitoring of the facility.

After July 16, 1985, Clow activated a calcium carbide treatment bunker. On December 28, 1993, the Ohio EPA issued DFFOs to supersede the July 16, 1985 Orders. Among other things, the December 1993 DFFOs required Clow to comply with ground water monitoring requirements in OAC rules 3745-65-90 through 3745-65-94 and rule 3745-27-10, as effective on May 1, 1990, including a closure/post-closure ground water monitoring plan and a ground water quality

assessment for the hazardous waste surface impoundment, calcium carbide desulfurization slag pile, solid waste landfill and the hazardous waste calcium carbide treatment bunker.

On February 26, 2001, the Ohio EPA Director issued a letter requesting that Clow modify its post-closure plan to implement final ground water monitoring and response requirements in Chapters 3745-54 and 3745-55 of the OAC.

According to information reported in an April 2, 2002, Ohio EPA interoffice communication, the calcium carbide desulfurization slag pile and calcium carbide treatment bunker were incorporated into the closure of the hazardous waste surface impoundment which entailed an engineered liner and cap system. Other information obtained from the Ohio EPA indicates that the surface impoundment has been closed in accordance with an approved closure plan, but a closure certification cannot be completed until the facility's active nonhazardous foundry waste cell, which shares a common cap with the surface impoundment, is closed. The Ohio EPA has reported that closure of the active nonhazardous foundry waste landfill is scheduled for December 2008.

Post closure ground water monitoring began in January of 1997, in accordance with a Post-Closure Assessment Monitoring Plan (PCAMP). The PCAMP combined the monitoring requirements for the solid waste landfill, hazardous waste surface impoundment and the active nonhazardous foundry waste landfill. The Ohio EPA reported that the monitoring program detected a number of inorganic constituents downgradient of the units at concentrations well above background. A few of these constituents, arsenic in particular, consistently exceeded the drinking-water maximum contaminant level in downgradient monitoring wells. The Ohio EPA also reported that detection of organic compounds are limited to one or two wells immediately downgradient from the landfill (up/side gradient from the surface impoundment) and include low levels of carbon disulfide, phenol compounds, and occasionally naphthalene. Based upon findings in a 1997 annual assessment monitoring report, the Ohio EPA requested a Corrective Measures Study for the hazardous and solid waste units.

In September of 1999, Clow submitted a Corrective Measures Plan (CMP) to the Ohio EPA for the solid waste landfill. The Ohio EPA determined that the document did not meet the general solid waste regulatory requirements of OAC 3745-27-10(F) nor did it address closure/post-closure requirements in OAC 3745-55 for the surface impoundment. On February 26, 2001, the Director of the Ohio EPA issued a letter requiring compliance with the final status rules OAC 3745-54 to 3745-55 for the closed hazardous waste surface impoundment. The December 28, 1993 DFFO's also include a provision to upgrade to the final status rules. Clow subsequently agreed to revise the ground water monitoring program for the closed landfill and surface impoundment to comply with OAC 3745-27-10 and OAC 3745-54 to 55. The PCAMP was revised in December 2001 to reflect these changes.

The Ohio EPA and Clow agreed to a CMP compiled in accordance with OAC 3745-27-10(F) for the following reasons: similar requirements of OAC 3745-27-10 and 3745-54 to 55, specifically with regard to corrective measures; the two units are immediately adjacent to one another; and similar

waste characteristics of each unit. According to the Ohio EPA, the latter two reasons make distinguishing the source of downgradient contamination difficult.

On February 19, 2002, the Ohio EPA Southeast District Office (SEDO) received a CMP from Clow dated February 2002. Ohio EPA Division of Drinking and Ground Water (DDAGW) personnel evaluated the CMP and did not recommend approval of the plan. Ohio EPA DDAGW personnel reported that the document does not supply sufficient information to implement corrective measures in accordance with OAC 3745-27-10(F) and recommended that the CMP be revised as directed in their comments. In July of 2002, a contractor for Clow responded to April 2002, Ohio EPA comments regarding the February 2002 CMP. Information in an August 8, 2002 Ohio EPA interoffice communication discusses concerns regarding defining the western unit boundary to include a downgradient monitoring well and the need to set the concentration level for arsenic at 10 ug/L to meet requirements in OAC 3745-27-10 (F).

On July 10, 2003, the Ohio EPA SEDO received a revised CMP from Clow. The DDAGW-SEDO indicated that the July 2003 CMP was essentially the same document as the February 2002 CMP and Clow needed to address specific comments.

On February 17, 2004, the Ohio EPA sent a letter to Clow with a comprehensive list of Agency comments regarding the July 2003 CMP. The Ohio EPA's February 17, 2004, letter also discusses proposed alternatives for Clow to consider as options to developing an acceptable CMP.

B. USEPA RCRA Actions

A Complaint and Findings of Violation were issued on December 6, 1983, which outlined various RCRA violations. A Consent Agreement and Final Order (CAFO) were entered on September 18, 1985, which required Clow to achieve compliance with RCRA violations.

On June 11, 1987, the United States filed a judicial complaint alleging Clow failed to comply with the CAFO and used its land disposal facilities to store, treat or dispose of hazardous waste despite having lost interim status. On December 18, 1988, the court issued an order granting the United States motion for partial summary judgment as to Clow's liability and liability to perform corrective action under RCRA 3008(h). On April 25, 1989, a Consent Decree was signed requiring the submission of a closure plan and post-closure plan for the hazardous waste surface impoundment, and corrective action, including a Remedial Facility Investigation (RFI), which would include ground water monitoring, a corrective measures study and corrective measures implementation. The Consent Decree also required Clow to pay a penalty of \$725,000. The RFI Workplan was approved on February 11, 1993. The RFI was completed in September of 1993 and revised in September of 1995. The RFI addressed combined, site-wide contamination from five waste management units, which included the former RCRA surface impoundment, former RCRA calcium carbide desulfurization slag treatment bunker, nonhazardous desulfurization slag pile, foundry waste landfill and a former RCRA asphalt paint waste storage area.

TSCA - PCBs

According to information obtained during the inspection, the facility had PCB transformers and capacitors that were manifested off site prior to the end of the nineteen nineties. Clow's maintenance

supervisor stated that the PCB transformers were replaced with either transformers that contained silicone oil or new transformers that did not contain PCBs.

The facility has three oil-filled hydraulic systems that use either "Fireguard" oil or a water soluble oil. One of the hydraulic systems is used in the shell core making process. A second hydraulic system services the pipe casting process. The third hydraulic system is used to tilt a molten metal holding ladle.

According to information provided by Clow, there are no oil-filled heat transfer systems at the facility.

EPCRA/CERCLA

As previously discussed, sulfuric acid is used as a scrubbing medium in the facility's Isocure core making process and at the WWTP. According to Clow's Tier II emergency and hazardous chemical inventory for the 2003 calendar year, the amount of sulfuric acid present at the facility is in the range of 1000 to 9,999 pounds on an average daily basis and in the range of 10,000 to 99,999 pounds on a maximum daily basis. Sulfuric acid is listed as an extremely hazardous substance in Appendices A and B to 40 CFR Part 355 with a threshold planning quantity 1,000 pounds. Since the amount of sulfuric acid present at the facility exceeds the threshold planning quantity, it appears that Clow is subject to the emergency planning provisions at 40 CFR 355.30.

A number of hazardous chemicals are used at the facility. As a result, Clow appears to be subject to the emergency release notification provisions at 40 CFR 355.40.

Copies of the facility's annual inventory reporting records for calendar years 2001, 2002 and 2003 were provided during the MMI. Based upon a review of those records, it was noted that Clow submitted Tier II hazardous chemical inventory forms to the Ohio State Emergency Response Commission, Coshocton County Emergency Management Agency, Coshocton City Fire Department and South Tuscarawas Fire Department for each of the three calendar years. The dates of the transmittal letters for the Tier II forms were March 1, 2002, February 26, 2003 and February 27, 2004 for calendar years 2001, 2002 and 2003, respectively.